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RESOURCES COMMISSION

## ANNUAL REPORT

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VILLAGE OF FENELON FALLS

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ANNUAL REPORT

ON

VILLAGE OF FENELON FALLS

WATER TREATMENT PLANT

OWRC PROJECT - 60-W-57



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FENELON FALLS WATER TREATMENT PLANT

OPERATED FOR

THE VILLAGE OF FENELON FALLS

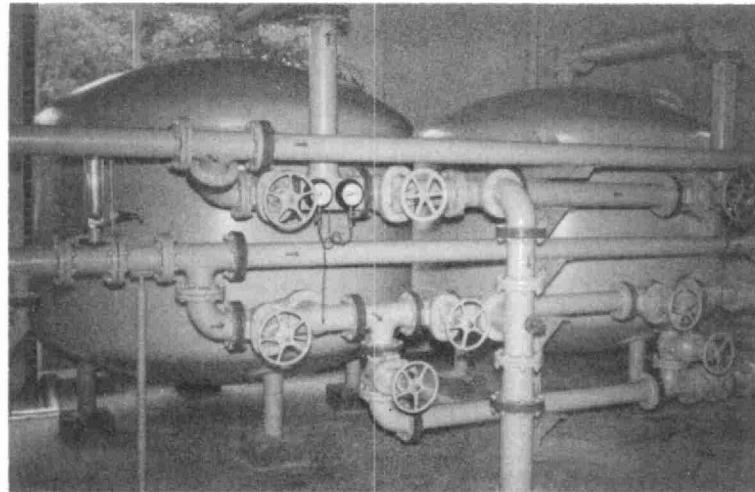
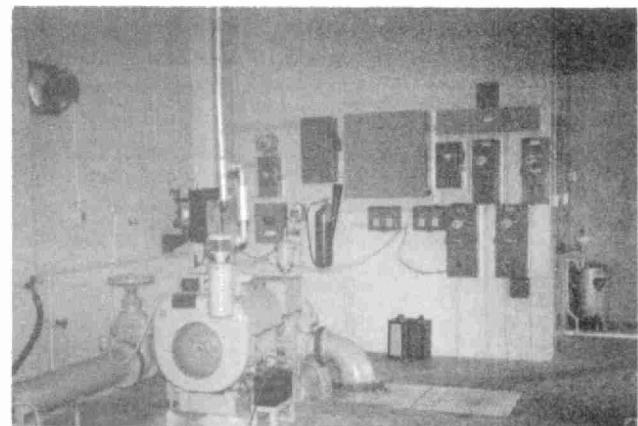
BY

THE ONTARIO WATER RESOURCES COMMISSION

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Mr. D. S. Caverly	Assistant General Manager
	and Director of Plant Operations
Mr. B. C. Palmer	Assistant Director,
	Division of Plant Operations
Mr. A. Clark and	Project Engineers,
Mr. T. Armstrong	Division of Plant Operations

Prepared by the  
Division of Plant Operations

FENELON FALLS  
PUMPING STATION AND EQUIPMENT



## FENELON FALLS WATER TREATMENT PLANT

### PROJECT DEVELOPMENT

On August 21st, 1957, representatives of the Town of Fenelon Falls met with OWRC officials to discuss a new water system for the town. The privately owned system in use at that time was approximately 50 years old, contaminated and served only 25% of the town's 1300 people. The consulting engineering firm of G. G. Reid and Associates Ltd., Toronto had compiled a report of the Town's water requirements in 1947. At the above meeting, it was suggested that this report be brought up to date so that the estimated cost of a new system could be obtained. The expenditure indicated by this revised report was \$295,000 of which \$40,000 was for a complete filtration plant.

After a revised assessment was taken, the Ontario Municipal Board was approached and tentative approval for financing the project through the OWRC was given on January 19, 1960.

The OWRC appointed Franklin McArthur Associates Ltd., consulting engineers, on October 14, 1959 and instructed them to complete the design of the system and to prepare documents for tender.

The tender call for construction of Water Intake, Pumping Station, Treatment Plant and Distribution System closed on January 19, 1961. The low figure of H. J. McFarland Co., Picton, Ontario (\$272,764.26) along with additional project expenses (total \$322,00) was submitted to the Ontario Municipal Board for final approval and it was received on February 15, 1961.

The construction of services throughout the town was planned as a municipal project.

The contract for the O.W.R.C. financed project was officially awarded to the H.J. McFarlane Co. on March 8th, 1961.

The plant commenced operation in October 1961 with a minimum of services having been installed. T. Bradbrooke was the municipal operator in charge of the plant, under the direction of the OWRC. By March 1, 1962, the plant was in full operation with a large proportion of the people receiving water. Mr. T. Bradbrooke was transferred to the payroll of the OWRC in March 1962.

#### SYSTEM DESCRIPTION

##### Source of Supply

The source of supply is Cameron Lake.

##### Intake

Water is delivered to the plant by means of an 18 inch diameter corrugated metal conduit 710 ft. in length.

##### Screening

There is a manually cleaned screen with  $\frac{1}{2}$  inch openings at the inlet to the pump suction well.

##### Pump Suction Well

There is a pump suction well with a capacity of 13,750 gallons.

##### Filters

There are two cylindrical pressure filters, each 8 ft. in

diameter. Each unit has a capacity of 126 g.p.m. when operating at a rate of 2.5 g.p.m./ft.<sup>2</sup> of surface and at a pressure of 75 psi. The piping arrangement is such that the filters may be operated singly or in parallel. One filter may be backwashed while the second unit remains in operation.

#### Clear Water Storage

A small clear well is provided. This unit has capacities of 3860 gallons and 5720 gallons at the low and high water levels respectively.

#### Surge Tank

A 6 ft. diameter steel surge tank is connected directly to the discharge main to eliminate sudden pressure changes in the system.

#### Instrumentation

A Fischer and Porter flow recording and totalizing device is provided on the discharge main. This device controls the chlorine feed rate.

#### Chlorination

Chlorine is applied to the pump suction well by means of a Fischer and Porter gas chlorinator with the approximate dosage being 2 lbs. chlorine daily. The minimum chlorine residual in the treated water is maintained at 0.2 PPM.

### PUMPING EQUIPMENT

#### Service Pumps

2-Allis Chalmers horizontal centrifugal pumps with a capacity of 204 U.S. g.p.m. each, at a T.D.H. of 175 ft. Each pump is powered by a 15 h.p. electric motor.

These pumps draw from the intake well and discharge to the inlet of the pressure filters.

Backwash Pump

1- Canadian horizontal centrifugal pump with a capacity of 612 U.S. g.p.m. at a T.D.H. of 40 ft. This pump has a 10 h.p. Tamper electric motor as a power supply.

This unit draws from the clear well.

Standby Fire Pump

1- Babcock-Wilcox and Goldie- McCulloch horizontal centrifugal pump with a capacity of 830 g.p.m. at a T.D.H. of 150 ft. The power supply for this pump is a 54.2 B.H.P. Wisconsin 4-cylinder gasoline engine.

In the event of an emergency this automatic start manual stop unit pumps directly from the pump suction well to the distribution system by-passing the filters.

Distribution System

The system has the following lengths and sizes of installed water mains:

18,346.7 ft. 6" asbestos cement pipe

5,335.0 ft. 8" " " "

3,479.0 ft. 10" asbestos cement pipe

There are 76-6" hydrants on the system for fire protection.

OPERATIONAL DETAIL

The plant is operated by Mr. T.E. Bradbrooke under the supervision of the Plant Operations Division of the OWRC.

Flow

Flow detail is shown by data compiled in Table I and the graph.

TABLE I

1962 - Fenelon Falls Water Treatment Plant

Flow Detail

MONTH	MAX. 24 hr. flow (Gallons)	Min. 24 hr. flow (Gallons)	Av. 24 hr. flow (Gallons)
Jan.	Plant not in Full Operation		
Feb.	" " "	"	
March	95,730	35,100	65,487
April	89,650	53,260	73,346
May	124,720	72,420	89,270
June	130,020	75,740	91,906
July	164,950	77,090	120,372
August	261,260	12,750	130,190
Sept.	91,730	51,550	69,700
Oct.	84,200	59,270	71,300
Nov.	Unreliable Due to Fire		
Dec.	" " "		70,880( " " )

There are approximately 1,000 people in the area who receive water from the system.

The approximate average flow per capita per day

$$\frac{84,300}{1,000} = 84.3 \text{ Gallons}$$

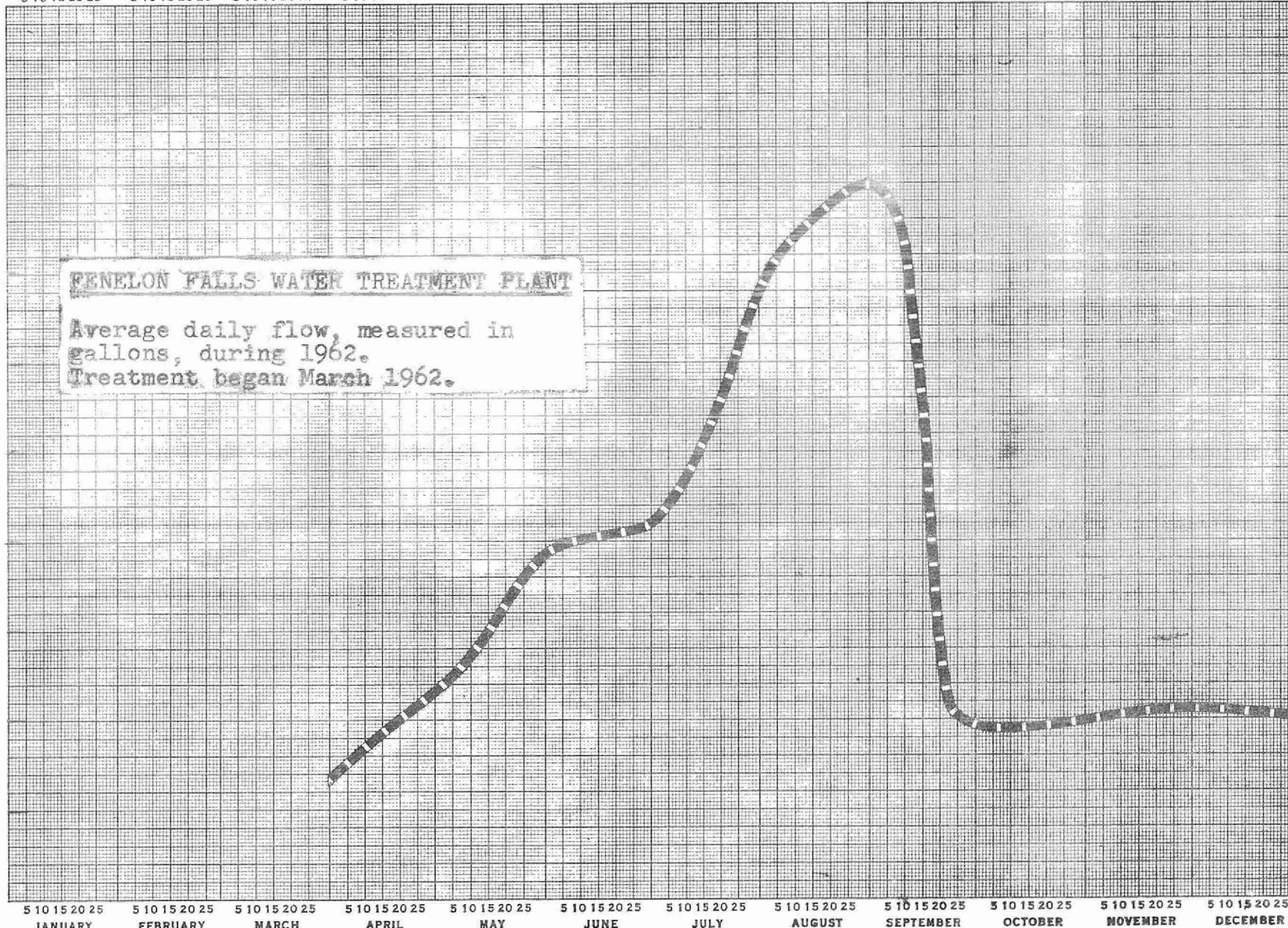
During 1962, the average daily flow was 84,300 gallons per day.

**K+E**

1 YEAR BY DAYS X 250 DIVNS.  
KEUFFEL & ESSER CO.  
MADE IN U.S.A.  
CALENDAR YEAR

**358-142**

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER  
5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25



**FENELON FALLS WATER TREATMENT PLANT**

Average daily flow, measured in  
gallons, during 1962.  
Treatment began March 1962.

The maximum 24 hr. flow was 261,260 gallons and occurred in August. The minimum 24 hr. flow was 12,750 gallons and it also occurred in August. The month with the greatest average daily flow (130,190 gallons) was August.

The total flow for the year was 30,771,024 gallons.

#### OPERATING COSTS

In 1962, the total operating cost of the Fenelon Falls Water Treatment Plant was \$5,582.36.

In Table II, the monthly operating costs are listed under various headings.

An explanation of the major amounts is as follows:

#### Payroll

December - Payment of accumulated overtime for the year in addition to regular payroll expenses.

#### Chemical

August - \$173.13 - Purchase of chlorine from C.I.L.

#### General Supplies

May - \$177.04 Canadian Johns-Manville - Transite Piping

Sept. - \$37.08 Espie Printing - Printing of bills, etc.

Oct. - \$260.85 - Canadian Ludlow Valve - Hydrant parts.

\$ 73.74 - Handley Planning Mill-Cupboard Material

\$ 44.93 - Canadian Brass-Service Fittings

#### Equipment

May - \$162.12 - Renown Plumbing-Main repair parts.

Dec. - \$141.26 Con, Engines and Machine - Gas engine parts

\$141.77 - B.L.M. Auto Clutch-Gas engine parts.

#### Sundry

Mar. - \$175.59 - Reed, Shaw & McNaught-Insurance

TABLE II

## FENELON FALLS WATER TREATMENT PLANT

1962 OPERATING COSTS

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	SUNDAY
JAN.	42.00				42.00		
FEB.	59.00				39.63		19.37
MAR.	376.03		137.12		19.65		219.26
APR.	314.84		300.00		1.96		12.85
MAY	741.70		240.00		192.19	162.12	147.39
JUNE	295.07	258.46			43.84		(7.23)-credit
JULY	429.98	359.99			28.02		41.97
AUG.	695.15	415.38		173.13	89.27		17.37
SEPT.	442.50	276.92			126.41		39.17
OCT.	677.87	276.92			385.08		15.87
NOV.	376.50	276.92			80.46		19.12
DEC.	<u>1131.72</u>	<u>456.90</u>			62.12	283.03	329.67
TOTAL	5,582.36	2321.49	677.12	173.13	1110.63	445.15	854.84

May-105.00 Dep't of Transport (Permit for Canal Crossing)

Dec-204.06 Reed, Shaw & McNaught-Insurance.

The operating expenditure for the last 10 months of '62 and a forecast for 1963 are as follows:

	<u>PAYMENTS IN 62</u>	<u>FORECAST '63</u>
Payroll	\$ 2,998.61	\$ 3,800.00
Superannuation		200.00
Fuel		20.00
Power	Paid by Municipality	
Chemical	173.13	200.00
General Supplies	1,110.63	450.00
Equipment	445.15	250.00
Repairs and Maintenance		350.00
Sundry	854.84	400.00
Insurance and Taxes	<u>                  </u>	<u>300.00</u>
	5,582.36	5,970.00
Contingency		<u>30.00</u>
		\$6,000.00

1962 Operating cost per capita \$5,582.36 = \$5.58  
1000

1962 operating cost per thousand gallons= \$.18

Please note the 1962 operating cost was for a 10 month period.

On November 10, 1962 a fire swept through the plant and the damage due to heat and smoke was extensive. The system was repaired

quickly so that the water supply to the town was not affected. The cost of repairs was in the most part covered by insurance.

The total capital cost of the OWRC financed project (60-w-57) up to the present time is \$313,415.22 and may be broken down as follows:

Construction of Water Intake, Pumping Station & Treatment Plant-

Contract 595-B   \$87,789.80

Construction of Water Distribution System -Contract 595-A-200,811.38

Engineering & Contingencies--   24,814.04

   \$313,415.22

The reserve for contingencies on Dec. 31, 1962 was \$2213.73

A project engineer of the Division of Plant Operations of the OWRC visited the project once each month during 1962 for general plant inspection and operator instruction. This number of visits was made to ensure that the new system was functioning properly.

The maintenance and electronics sections of the Division of Plant Operations made visits to the site as necessitated and also for general plant inspections.

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